

REPORT AND RECOMMENDATIONS OF THE HIGH POTENCY CANNABIS THINK TANK TO THE STATE OF CALIFORNIA

Presentation to

Stanford Cannabis Awareness and
Prevention Conference

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The background is a dark teal color. On the right side, there are several overlapping geometric shapes: a large teal circle with a fine dot pattern, a solid teal circle, and a small solid red circle. The text is positioned on the left side of the slide.

Question for you:

What from your experience has drawn you interest to this topic of high potency cannabis?

What makes you care about this?

High Potency Cannabis

An area of growing
international and local
concern

Washington and Colorado
convened reports

Psychosis, Addiction, Chronic Vomiting: As Weed Becomes More Potent, Teens Are Getting Sick

With THC levels close to 100 percent, today's cannabis products are making some teenagers highly dependent and dangerously ill.

 Share full article



 2.8K



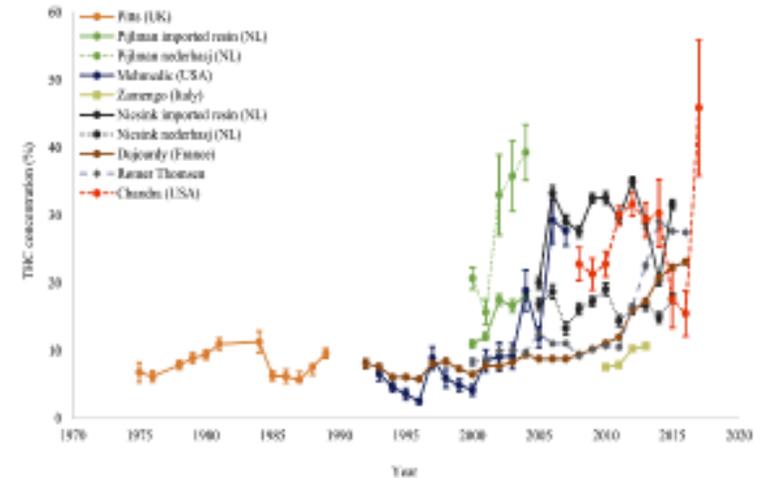
Context

- Convened by the California Department of Public Health after directive from Governor Newsom
- Interdisciplinary group of 13 scientific and medical cannabis experts
- Invited 21 external global cannabis experts to provide anonymous input on policies
- 100% volunteer effort
- Report is an independent product of the scientific committee and represents the consensus reached by the authors, it does not represent any government agency position
- Full report can be found at:
<https://www.gettingitrightfromthestart.org/wp-content/uploads/2024/10/California-High-Potency-Cannabis-Think-Tank-Report-10-30-24.pdf>

Background – profound market transformation

- THC of flower sold in CA marketplace today (> 20%) is 4 times higher than available in initial medical market (~5%), 5-10 times 1970s flower, and extracts / derivative products have potencies that far exceed that of the natural plant (80-99% THC).
- Few products are offered at lower potency, restricting choice of consumer and putting naïve consumers at greater risk
 - hardly anything available in the CA marketplace with THC ≤ 10%
- Research we have on low potency cannabis cannot be used to infer the health risks of higher potency products

Figure 2. Mean (standard error) concentrations of delta-9-tetrahydrocannabinol (THC) in cannabis resin over time.⁴



Reproduced from Freeman TP, Craft S, Wilson J, et al. Changes in delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) concentrations in cannabis over time: systematic review and meta-analysis. *Addiction*.

Frequent & problematic use increasing

- **CA Teens** –any use decreased post legalization – but daily users increased
- **Young adults 19-30:** Nationally, past year use up from 23.3% in 1991 to 42.4% in 2023.
 - Daily use quadrupled, from 1991 to 2023.
 - One in ten young American adults uses cannabis nearly every day
- **35 to 50 year-olds :** Nationally cannabis use more than doubled and daily use tripled 2008 to 2023
- **Use in Pregnancy: Nationally use doubled. Daily use tripled**
 - In N. California Kaiser Permanente prenatal cannabis use increased from 5.5% in 2012 to 9.0% in 2022, with striking differences in prevalence by age, race and ethnicity
- **Heavier use than alcohol:** 2022 Cannabis users 7 x more likely to use daily than alcohol users

Specific adverse health effects of high potency

High potency cannabis has been strongly associated with:

- increased frequency of use
 - problematic use
 - cannabis use disorder
 - psychosis and schizophrenia
-
- Increased frequency in turn increases other cannabis related harms
 - Long term-use , especially high potency products, is associated with even more harms and increased health care services utilization

"Indeed, high-concentration THC products are associated with a higher risk of psychosis and cannabis use disorder."

National Academies of Science, Engineering and Medicine, 2024

Cannabis use disorder

- Developed in 20-25% of those who use cannabis
- 45% of those who start before age 16
- This progression to CUD has doubled over past 20 years (used to be 1 in 10)

There are additional health risks if used during pregnancy

For the infant and exposed child

- Lower birthweight/SGA/preterm birth
- Neonatal intensive care unit admission
- Possibly LT psychopathologies in exposed children, including psychotic-like experiences and attentional problems, over a decade after prenatal exposure

For the pregnant person

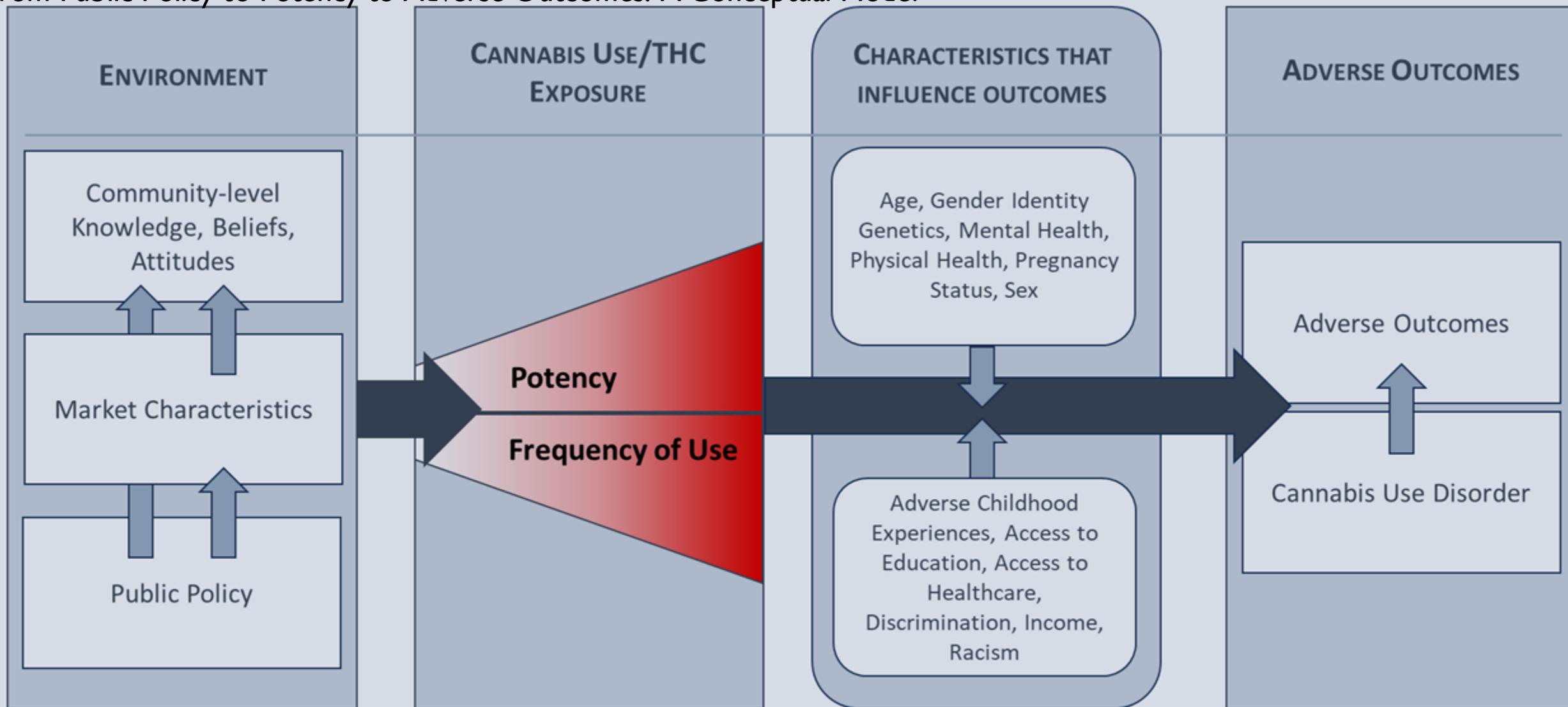
- High blood pressure during pregnancy
- Preeclampsia

Yet, research shows a growing share of people are using cannabis while pregnant, getting information from dispensaries that it is safe

High potency cannabis – a dose-response increase in risk defies oversimplification

- The higher the levels of THC the higher the risk of adverse events & CUD cannabis use disorder.
- Adverse events are more common and can be more intense when the cannabis contains >10% THC in inhaled products, or >10 mg THC in edibles
- Frequent use, especially daily or near-daily, interacts with potency to increase risk
- **Certain groups are particularly vulnerable**
 - Those at a young age (26 years and under)
 - Infants exposed during pregnancy
 - Those with a personal or family history of mental health conditions or substance use disorders.
- People who are **inexperienced with cannabis** may experience adverse effects even at low doses.

From Public Policy to Potency to Adverse Outcomes: A Conceptual Model



THC content (potency) and frequency of use are crucial determinants of cannabis's impact on public health. Potency and frequency of use are influenced by **environmental factors**, such as the availability of high-potency products, marketing, and regulatory policies, and community knowledge and attitudes. **Individual characteristics** of people who use cannabis, including age and mental health status and **social determinants of health**, such as access to healthcare, adverse childhood experiences, and racism influence how potency and frequency of use affect adverse outcomes, and can also influence patterns of use. Cannabis use disorder, itself an adverse outcome, promotes a cycle of heavy use despite

No free ride –

Increasing cannabis consumption, especially high potency, has costs

The mental health, educational and physical health impacts have high social and monetary costs to families, state and local government

- Medical care
- Unemployment
- Homelessness
- Psychiatric care
- More youth with lower educational achievement
- More children with attention issues and psychopathology

Our objectives behind our policy recommendations

- 1) Improve health of Californians by
 - Reducing the incidence of cannabis use disorder
 - Reducing use and daily use of cannabis by youth under age 21
 - Reducing accidental poisonings
 - Reducing cannabis-associated psychosis and psychotic disorders
 - Reducing cannabis use during pregnancy
 - Reducing cannabis-impaired driving

Our objectives behind our policy recommendations

2) Enhance ability of the consumer to make informed decision about their use, by

- Increasing public awareness of the hazards of high THC potency products and high THC intake
- Reducing availability and attractiveness of high THC potency products
- Increasing availability of lower THC potency product options

Our considerations when approaching policy recommendations

- There is no simple fix given migration of whole market
- Taking a holistic approach to harm reduction is necessary
- Strategies must address not only potency of products themselves but also increasing public awareness, promoting safer use, and reducing exposure of highest-risk groups
- % THC cutoffs do not define high potency or imply “safety” – rather they aim to simply reduce harm from extremes

Local Action is equally or more feasible

- While the report was primarily aimed at the State, most recommendations can also be implemented locally under current authority in California or at state or local level in other states
- Many jurisdictions have already implemented one or more recommendations
- Like flavored tobacco, local government will likely need to lead
- Local health departments, providers, educators and other community voices are essential voices

Recommended policies: Marketing and advertising

- **Prohibit cannabis and cannabis product advertising on billboards**, and any other general public-facing advertising that children see.* L

- Ex: San Bernardino and others

- **Restrict advertising of cannabis flower** with over 20% THC or cannabis products with over 35% THC to simple plain text only. L

* = One of the top ten recommendations

L = locally feasible in CA

Recommended policies: Product requirements



- **Limit manufacture and sale of high THC products.*** ^L
 - Prohibit the sale of products for inhalation (e.g. dabs, wax, shatter) with THC content above 60%
 - Prohibit the sale of cannabis flower with THC content above 25% and prohibit the infusion of additional THC (or other psychoactive cannabinoids) into flower or pre-rolls.
 - Limit edible products to a maximum of one 10 mg THC dose per physical piece or liquid beverage container (excluding tinctures)
Examples: CT, VT, Quebec, Uruguay, Germany, Canada

- **Prohibit the use of added flavors** ^L
(including fruits, mint, menthol, vanilla, chocolate, spices, and other common food flavors) in all inhaled products, whether natural or synthetic. Prohibit language and images that could lead consumers to believe the product has flavors other than those of cannabis.*
 - At a minimum, this should apply to flower or pre-rolls with THC content above 20% and other inhaled products with THC content above 35%.
 - Example: Contra Costa County, Chico, Watsonville

* = One of the top ten recommendations
^L = locally feasible in CA

Recommended policies: Retail Environment

- **Require retailers to offer lower dose options** for flower (<10% THC) and edibles (5 mg or less), including products which are more suitable for medical use. ^L
- Consider testing, promoting, or facilitating a **Quebec-style public monopoly** approach to cannabis sales, particularly in jurisdictions that have not yet legalized cannabis sales.* ^L
- **Require more robust age-gating** for websites, online sales, and other online content ^L

* = One of the top ten recommendations
L = locally feasible in CA

Recommended policies: Taxation and Pricing

- **Restructure state excise taxation** on adult-use cannabis to be proportional to the milligrams of THC in the taxed product, applicable to all cannabis products. Ensure that the restructuring maintains or increases cannabis tax revenue in line with the goals established by Assembly Bill 195.* L
 - Ex: IL, CT, Canada, Grass Valley, Cathedral City
- **Prohibit discounting or promotion** of flower >20% THC or other inhaled products over >35% THC. L
 - Ex: Pasadena and 3 others in CA

* = One of the top ten recommendations
L = locally feasible in CA

Recommended Policies: Address attractiveness to children, packaging, labeling, and consumer information



- **Enforce existing laws and regulations** that prohibit products that are attractive to children and restrict flavored additives in inhaled cannabis products.* ^L
- **Require plain packaging** for all cannabis products with flower THC content above 20%, inhaled products exceeding 35% THC, and edibles containing more than 10 mg of THC per individual piece or liquid container, if permitted. Ideally, this should extend to all cannabis products.*
 - Example: 4 states and Canada
- **Require clear standard information** on the number of standard doses in a package on all cannabis and cannabis product packaging, based on a standard dose of 5 mg THC.

* = One of the top ten recommendations
L = locally feasible in CA

Recommended Policies: Address attractiveness to children, packaging, labeling, and consumer information



- **Strengthen regulations** with clearer, evidence-based criteria for identifying and prohibiting products, packaging, marketing, and advertising characteristics that appeal to children and youth.* L
 - Ex: Watsonville, Mono, Sonoma Cty, Chula Vista and others
- **Require prominent, rotating, graphic front-of-pack health warning labels** on cannabis products and on advertising, including specific warnings about high potency THC, such as risks of dependency and mental health harms. Health warnings should cover at least one-third of the front-of-pack and 15% of any print advertisement surface, with clear contrast between the warnings and the background.
 - Example: Canada
- **Adopt this Committee's recommendations for implementing SB540 requirements.**

* = One of the top ten recommendations
L = locally feasible in CA

Recommended Policies: Public Education

- **Fund and implement public education campaigns** on the risks of high potency cannabis, including mental health risks. Allocate additional funds from Tier 3 to the CDPH, totaling \$10 million or more per year beyond their current allocation.* (L – with local taxes)

* = One of the top ten recommendations
L = locally feasible

Recommended Policies: Compliance Screening, Data Collection, Research and Evaluation

- Allocate funds from the regulatory tier of taxation to **establish a pre-market product and packaging review team**. Would screen new products for compliance with these recommendations (if accepted), existing regulations, and attractiveness to children. The team should also review all existing products within two years.
- **Fund and ensure the tracking and regular reporting** of negative health outcomes associated with high potency products in hospitals, EDs, and ambulatory. Include the type and potency of marketed products as required data elements.*
- Make the current Prop 64 requirement of at least \$10 million in annual cannabis **tax revenue for research** an ongoing budgetary commitment.
- Provide additional funding in the 2024 budget to the University of California Office of the President to **support scientific advice and testing related to the implementation of SB540**.

* One of the top ten recommendations

SB 540 Recommendations Provide clear info on safer use to consumers (committee drafted this version)

Involve this or a similar group in
Part II - reviewing health warnings

Local government can help enforce
compliance by retailers

Figure 4: Committee Recommendations for the SB540 Point-of-Sale Brochure

Tips for a safer (and better!) cannabis experience.

1. Cannabis can wait.
If you want to use cannabis, wait at least until you turn 21. It will reduce the chance of long-term health harms including addiction.
Your brain doesn't stop maturing until your late twenties. So, the younger you start using cannabis, the higher the risk of long-term harms. Frequent use, especially of high-THC products, affects not only the brain but also other organs in the body. This increases the risk of becoming dependent on cannabis and of mental health and reproductive problems. Frequent use when you are young can worsen your school performance and lower your future income.

2. Use less often.
The more you use cannabis, the worse its unwanted effects.
People who use cannabis daily or almost daily are much more likely to develop long-term health problems. These include changes in brain function, reduced fertility for men and women, mental health problems, impaired driving, and doing poorly in school. For a safer and better cannabis experience, limit your use to one day a week or on weekends, or less.

3. Start low and go slow.
Higher THC does not mean a better cannabis experience, especially if you are new to it.
The effects of using high-THC products are harder to control. High-THC products increase the chance of unpleasant effects like paranoia, panic, and severe vomiting. Frequent use of these products can cause dependence and increase the risk of psychosis in some people.
• Always check labels for THC content and choose lower-THC products.
• If you use flower or edibles, consider using flower with 10% THC or less or edibles with 5 mg or less. Ask your retailer to carry lower-THC products.
• If you smoke or vape, wait between puffs until you feel the full effect, to avoid taking too much. If you vape, be aware you are using a high-THC product.
• Avoid concentrates, especially if you are new to cannabis.

4. Pregnancy and nursing are not the right time for cannabis use.
Doctors do not recommend cannabis use during pregnancy or during the months while you are nursing.
THC and other chemicals in cannabis are passed from mother to child and harm your baby's health. Cannabis can increase the risk of delivering too early, low birth weight, the baby needing intensive care, and of developmental problems. Try to stop before pregnancy, but cutting back at any time can still help protect your baby. If you have nausea during pregnancy, ask your healthcare provider about recommended treatments.

5. Consider your history.
Do you or a family member have serious mental health challenges or addiction? Cannabis can make things worse.
If you, or people in your family, have had any serious mental illness (like psychosis, schizophrenia, or mood disorders) or challenges with substance use, this increases your risk for harm. You should avoid cannabis. Even though you might feel better at first, continued use may worsen your mental health.

6. Edibles take time to act.
Edibles can typically take 30 minutes to 1 hour to act, but full effects can take as long as 2 to 4 hours. Consuming more during this time may cause unpleasant adverse effects.

7. Store safely.
Keep your cannabis locked up if you have children, pets, or visitors in your home. Hiding it may not be enough to keep children safe — especially with edibles.

8. Do not drive.
Driving after using cannabis increases your risk of accidents.
Do not drive or operate heavy machinery. Even after effects seem to have worn off, your driving can still be impaired for more than 4 hours. Using cannabis with alcohol or certain other drugs further increases crash risk.

TIPS FOR A SAFER (AND BETTER) CANNABIS EXPERIENCE

For more information:
• hello@yourdomain.com
• www.yourwebsite.com

Place Holder: Other content
Police Control Helpline (800) 223-3222
Suicide & Crisis Lifeline Dial 9-8-8

YOUR LOGO

DCC Adopted brochure now required in California retailers

High Potency

Consuming higher-potency THC products does not mean a better cannabis experience.

Higher-potency THC products are harder to control and come with a higher risk of adverse effects. Using them often may cause dependency in some people.

If you are new to cannabis, be careful with higher-potency products like concentrates and vape cartridges.

If you are buying cannabis, compare labels and consider lower-potency products:

- Flower with less than 20% THC
- Edibles with close to 5mg THC per serving (or consume half of a 10mg THC serving)

If you are inhaling cannabis, wait between puffs until you feel the full effect.

Pregnancy and Breastfeeding

There are risks to your baby from using cannabis. Your baby consumes what you do.

Do not use any cannabis if you are:

- pregnant or may be pregnant
- breastfeeding

This includes:

- inhaling cannabis (smoking, vaping, dabbing)
- eating or drinking cannabis products
- applying cannabis-infused creams or lotions

No matter how you consume cannabis, THC and other chemicals will be passed to your baby through your placenta and breastmilk.



If you use medicinal cannabis, ask your doctor about alternative treatments during pregnancy or while breastfeeding.

Effects of Cannabis Use

Wondering what to expect when using cannabis?

Cannabis has two major chemicals that affect the brain differently:

- **THC (Tetrahydrocannabinol)** makes you feel "high". How you feel depends on how much THC you take, and the effects can vary from person to person.
- **CBD (Cannabidiol)** doesn't make you feel "high", but can have other effects.

The effects of using cannabis may include:

- Trouble with thinking, remembering, and problem-solving
- Seeing or hearing things that aren't real (with high doses and/or high potency)
- Feeling like time is moving slower or faster
- Feeling relaxed or paranoid
- Having mood swings
- Having increased or decreased anxiety
- Feeling dizzy
- Having dry mouth or bloodshot eyes
- Relieving pain and reducing nausea/vomiting
- Impaired movement and coordination
- Feeling hungry
- Faster heartbeat or lower blood pressure

Edibles: Start Low, Go Slow.

Use extra caution, as the delayed onset of edibles can have unintended effects. If you consume a cannabis edible (like brownies, gummies, or an infused beverage), it can take up to 2 hours to begin feeling the effects, and up to 4 hours to feel the full effects. This is much slower than smoking or vaping, and the "high" can feel stronger. Start with a small amount of THC (5mg or less) and wait at least 2 hours to see how you feel.

When consuming edibles, you can always take more later, but you can't take it back.

Drive high, get a DUI. Driving under the influence of cannabis is illegal and increases your risk of getting into an accident. Penalties for driving high are the same as driving drunk.

Mental Health

There are potential risks to your mental health from cannabis use.

Research suggests that mental health disorders may develop or worsen from:

- Daily cannabis use
- Near-daily cannabis use
- Higher-potency cannabis use

These types of use have been linked to Cannabis Use Disorder, and may lead to:

- Hallucinations
- Thoughts of self harm
- Schizophrenia
- Suicide attempts
- Depression
- Suicide
- Anxiety
- Temporary psychosis

Minors and Young Adults

Our brains actively develop until around the age of 25. Using cannabis regularly while younger can cause long-term problems with thinking and mental health.

Parents, be aware. Edibles and other cannabis products can be mistaken for food or candy. Like medications, you should keep cannabis products in child-resistant packaging. Store and dispose of cannabis products where they cannot be easily seen or accessed by children and pets.

California Poison Control: (800) 222-1222
Animal Poison Control: (888) 426-4435
Dept of Cannabis Control: cannabis.ca.gov
Dept of Public Health: cdph.ca.gov



Department of
Cannabis Control
CALIFORNIA

Revised 12/2024

Ensure you have the most
up-to-date information →

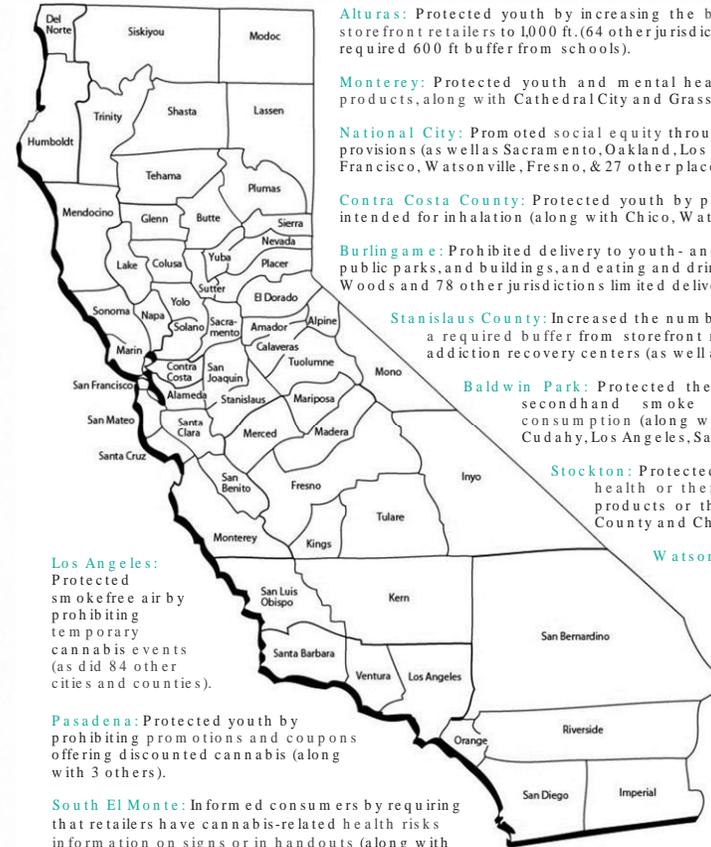


Examples of Local Action

THE STATE OF CANNABIS POLICY IN CALIFORNIA'S CITIES & COUNTIES in 2024



Examples of what your neighbors are doing to protect youth, public health, and social equity.



Alturas: Protected youth by increasing the buffer between schools and storefront retailers to 1,000 ft. (64 other jurisdictions also increased the state-required 600 ft buffer from schools).

Monterey: Protected youth and mental health by taxing high potency products, along with Cathedral City and Grass Valley.

National City: Promoted social equity through equity in licensing & hiring provisions (as well as Sacramento, Oakland, Los Angeles City, Long Beach, San Francisco, Watsonville, Fresno, & 27 other places).

Contra Costa County: Protected youth by prohibiting flavored products intended for inhalation (along with Chico, Watsonville, & Mammoth Lakes).

Burlingame: Prohibited delivery to youth- and children-serving locations, public parks, and buildings, and eating and drinking establishments; Laguna Woods and 78 other jurisdictions limited delivery destinations.

Stanislaus County: Increased the number of sensitive use sites with a required buffer from storefront retailers, such as libraries and addiction recovery centers (as well as 147 other jurisdictions).

Baldwin Park: Protected the public and workers against secondhand smoke by not allowing on-site consumption (along with 157 other places including Cudahy, Los Angeles, San Diego, & Santa Cruz).

Stockton: Protected consumers by not allowing health or therapeutic claims on cannabis products or their marketing (as did Mono County and Chula Vista).

Watsonville: Protected youth by prohibiting advertising, packaging, and products attractive to youth (along with Mono County, Sonoma County, Pomona, Chula Vista, and 8 others).

Salinas: Protected youth by capping the number of licensed retailers (160 other jurisdictions also capped the number of dispensaries).

San Bernardino: Protected youth by prohibiting billboards and restricting business signage to what is needed for identification only (140 other jurisdictions also limited outdoor advertising).

Los Angeles: Protected smokefree air by prohibiting temporary cannabis events (as did 84 other cities and counties).

Pasadena: Protected youth by prohibiting promotions and coupons offering discounted cannabis (along with 3 others).

South El Monte: Informed consumers by requiring that retailers have cannabis-related health risks information on signs or in handouts (along with 45 others, including San Francisco, San Jose, Culver City, Richmond, & Chico).

Chula Vista: Protected youth by banning cannabis-infused beverages (along with Pasadena, McFarland, & Mono County).

El Monte: Protected youth by dedicating tax revenue to youth programs and addiction prevention; 24 other jurisdictions dedicated tax or fee revenue to youth, prevention, and/or social equity.

Some Recommendations are part of annual Local Cannabis Policy Scorecards

See:

www.gettingitrightfromthestart.org

to track policy adoption

Cannabis Policy 2024 SCORECARD

Pomona



This scorecard analyzes local cannabis ordinances passed prior to January 1, 2024, in each California city or county that legalized storefront retail sales, to assess policies in effect going into 2023. It evaluates to what extent potential best practices were adopted to protect youth, reduce problem cannabis use and promote social equity beyond those already in state law. Scores fall into six public health and equity focused categories for a total maximum of 100 points.



RETAILER REQUIREMENTS	TAXES & PRICES	PRODUCT LIMITS	MARKETING	SMOKE-FREE AIR	EQUITY & CONFLICTS OF INTEREST
Limit # of retailers (max. 10 pts)	Local retail tax (6 pts)	Limit high potency products (max. 6 pts)	Limit billboards (max. 6 pts)	Prohibit temporary event permits (5 pts)	Licensing priority for equity applicants (3 pts)
Require distance >600 ft. from schools (5 pts)	Revenue dedicated to youth, prevention or equity (max. 6 pts)	END THE CANNABIS KIDS MENU	Prominent health warnings on ads (4 pts)	Prohibit on-site consumption (3 pts)	Equity in hiring requirements (3 pts)
Require distance between retailers (2 pts)	Tax by THC content (5 pts)	No flavored products for combustion or inhalation (max. 5 pts)	Limit therapeutic or health claims (3 pts)		Cost deferrals for equity applicants (1 pt)
Other location restrictions (max. 3 pts)	Prohibit discounting (2 pts)	No cannabis-infused beverages (4 pts)	Business signage restrictions (3 pts)		No prescriber on retail premises or in ownership (max. 2 pts)
Health warnings posted in store or handed out (max. 8 pts)	Minimum price (1 pt)	Limit other products/packaging attractive to youth (2 pts)	Limit marketing attractive to youth (2 pts)		
28	11	3	5	8	5

TOTAL SCORE = 60

Engage!!!!

- There will be no positive change without providers, educators, community partners and others elbowing our way to the table
- Today policy discussions are almost entirely driven by industry

Question and answers

- Questions on talk?
- How do you envision you could engage to address this in your state or local community?

Thank you

The High Potency Think Tank Scientific Committee

Thank you to CDPH for convening and supporting our work

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General cannabis adverse effects – increase with frequent use

Acute:

- Impaired learning and memory,
- Disrupted executive function and perception (leading to problems with driving or operating equipment)
- Particularly among people who are inexperienced with cannabis, anxiety, and panic.

Common adverse effects of frequent and prolonged cannabis use, even when not acutely intoxicated

- **Cannabis use disorder (using cannabis despite adverse consequences and physiological dependence) .**
- Severe nausea and vomiting (cannabis hyperemesis syndrome).^{34,35}
- Other serious adverse effects:
- Onset or worsening of /or transition between psychosis and schizophrenia
- Increased risk of car crashes
- Increased risk of other mental illnesses, suicidal ideation and attempts
- Cardiovascular disease
- Fertility problems in men and women
- With smoking, respiratory disease.

Frequent cannabis use is also associated with :

- Poorer school performance
- Higher unemployment
- Lower job income.